WHAT IS CLAIMED IS:

1. A light receiving apparatus for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means and receiving the light by a storage-type position sensor, comprising means for obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency.

2. The light receiving apparatus according to claim 1, wherein said storage-type position sensor uses a non-interlace type CCD camera which can control the storage time when the light is received by the storage-type position sensor.

3. The light receiving apparatus according to claim 1, wherein said storage-type position sensor uses an interlace type CCD camera which can control even/odd storage time when the light is received by the storage-type position sensor.

4. The light receiving apparatus according to claim 1, wherein said storage time when the light is received by

the storage-type position sensor starts earlier than a pulse light emitting start and ends later than a pulse light emitting end.

5. The light receiving apparatus according to claim 1, wherein said pulse light emitting apparatus uses an excimer laser.

6. The light receiving apparatus according to claim 1, wherein said pulse light emitting apparatus is controlled by two steps of a dummy pulse light emitting step and a measurement pulse light emitting step, and data storage by said storage-type position sensor is not carried out by the dummy pulse light emitting, but by said measurement pulse light emitting, the storage time of said storage-type position sensor and said pulse light emitting frequency are obtained from the cycle of the oscillating means and the predetermined number of pulses to start the storage by said storage-type position sensor and emit said pulse light from the pulse light emitting apparatus by the obtained pulse light emitting frequency.

7. The light receiving apparatus according to claim 1, wherein the storage start of said storage-type position sensor and the pulse light emitting from said pulse

light emitting apparatus by the obtained pulse light emitting frequency are carried out simultaneously.

8. The light receiving apparatus according to claim 1, wherein the oscillating cycle of the oscillating means is adjusted to said pulse light emitting frequency by adjusting the oscillation frequency of said oscillating means to the storage time of said storage-type position sensor, and there is no need for adjusting said oscillating means to an image capture cycle by said light receiving apparatus.

9. The light receiving apparatus according to claim 1, wherein there is no need for adjusting said oscillating means to measurement, permitting use of the oscillation frequency of said oscillating means in exposure.

10. The light receiving apparatus according to claim 1, wherein there is no need for synchronizing a staring point of said oscillating means with the storage start of said storage-type position sensor, controlling the storage time of the storage-type position sensor corresponding to an amount of said pulse light required for the measurement.

11. The light receiving apparatus according to claim 1, wherein said pulse light of a few pulses is first

emitted to wait stabilization of energy of the pulse light and then start the storage by said storage-type position sensor for emitting light of required pulses.

12. A mark detecting apparatus, comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus, and reflected light from the mark is received by said storage-type position sensor to detect the mark.

13. The mark detecting apparatus according to claim 12, wherein an amount of the reflected light of the mark is measured by the mark.

14. The mark detecting apparatus according to claim 12, wherein contrast of the mark is measured by the mark.

15. The mark detecting apparatus according to claim 12, wherein a position of the mark is measured by the mark.

16. An exposing apparatus for projecting a pattern on an original plate stage on a substrate of a substrate stage via a projection lens, comprising:

a mark detecting apparatus for detecting one or both of a positioning mark on said original plate stage and a positioning mark on said substrate stage,

said mark detecting apparatus comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus, and reflected light from the mark is received by said storage-type position sensor to detect the mark.

17. An exposing apparatus for projecting a pattern on an original plate stage on a substrate of a substrate stage via a projection lens, comprising:

a mark detecting apparatus for detecting one or both of a contrast measurement mark on said original plate stage and a contrast measurement mark on said substrate stage,

said mark detecting apparatus comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus, and reflected light from the mark is received by said storage-type position sensor to detect the mark.

18. A manufacturing method of a semiconductor device, comprising steps of:

locating a plurality of semiconductor manufacturing apparatuses including an exposing device in a plant; and

manufacturing the semiconductor device using the plurality of semiconductor manufacturing apparatuses,

said exposing apparatus comprising a mark detecting apparatus for detecting one or both of a positioning mark on an original plate stage and a positioning mark on a substrate stage,

said mark detecting apparatus comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus, and reflected light from the mark is received by said storage-type position sensor to detect the mark.

19. A manufacturing method of a semiconductor device, comprising steps of:

locating a plurality of semiconductor manufacturing apparatuses including an exposing device in a plant; and

manufacturing the semiconductor device using the plurality of semiconductor manufacturing apparatuses,

said exposing apparatus comprising a mark detecting apparatus for detecting one or both of a contrast measurement mark on an original plate stage and a contrast measurement mark on a substrate stage,

said mark detecting apparatus comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus, and reflected light from the mark is received by said storage-type position sensor to detect the mark.

20. The manufacturing method of the semiconductor device according to claim 18, further comprising steps of:

connecting said plurality of semiconductor manufacturing apparatuses with a local area network;

connecting said local area network with an external network outside said semiconductor manufacturing plant;

obtaining information on said exposing apparatus from database on said external network using said local area network and said external network; and

controlling said exposing apparatus based on said obtained information.

21. The manufacturing method of the semiconductor device according to claim 19, further comprising steps of:

connecting said plurality of semiconductor manufacturing apparatuses with a local area network;

connecting said local area network with an external network outside said semiconductor manufacturing plant,

obtaining information on said exposing apparatus from database on said external network using said local area network and said external network; and

controlling said exposing apparatus based on said obtained information.

22. The manufacturing method of the semiconductor device according to claim 18, wherein maintenance information of said manufacturing apparatus is obtained through data communication by having access to database provided by a vendor or user of said exposing apparatus via said external network, or production management is carried out through data communication with a semiconductor manufacturing plant different from said semiconductor manufacturing plant via said external network.

23. The manufacturing method of the semiconductor device according to claim 19,

wherein maintenance information of said manufacturing apparatus is obtained through data communication by having access to database provided by a vendor or user of said exposing apparatus via said external network, or production management is carried out through data communication with a semiconductor manufacturing plant different from said semiconductor manufacturing plant via said external network.

24. A semiconductor manufacturing plant, comprising:

a plurality of semiconductor manufacturing apparatuses including an exposing apparatus;

a local area network for connecting said plurality of semiconductor manufacturing apparatuses; and

a gateway for connecting said local area network with an external network outside said semiconductor manufacturing plant, permitting data communication of information on at least one of said plurality of semiconductor manufacturing apparatuses,

said exposing apparatus comprising a mark detecting apparatus for detecting one or both of a positioning mark on an original plate stage and a positioning mark on a substrate stage,

said mark detecting apparatus comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus,

and reflected light from the mark is received by said storage-type position sensor to detect the mark.

25. A semiconductor manufacturing plant, comprising

a plurality of semiconductor manufacturing apparatuses including an exposing apparatus,

a local area network for connecting said plurality of semiconductor manufacturing apparatuses,

a gateway for connecting said local area network with an external network outside said semiconductor manufacturing plant, permitting data communication of information on at least one of said plurality of semiconductor manufacturing apparatuses,

said exposing apparatus comprising a mark detecting apparatus for detecting one or both of a contrast measurement mark on an original plate stage and a contrast measurement mark on a substrate stage,

said mark detecting apparatus comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light

emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus, and reflected light from the mark is received by said storage-type position sensor to detect the mark.

26. A maintenance method of an exposing apparatus, comprising steps of:

preparing database which stores information on maintenance of said exposing apparatus on an external network outside a plant where said exposing apparatus is located;

connecting said exposing apparatus with a local area network in said plant; and

maintaining said exposing apparatus based on the information stored in said database using said external network and said local area network,

said exposing apparatus comprising a mark detecting apparatus for detecting one or both of a positioning mark on said original plate stage and a positioning mark on said substrate stage, said mark detecting apparatus comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse

light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus, and reflected light from the mark is received by said storage-type position sensor to detect the mark.

27. A maintenance method of an exposing apparatus, comprising steps of:

preparing database which stores information on maintenance of said exposing apparatus on an external network outside a plant where said exposing apparatus is located;

connecting said exposing apparatus with a local area network in said plant; and

maintaining said exposing apparatus based on the information stored in said database using said external network and said local area network,

said exposing apparatus comprising a mark detecting apparatus for detecting one or both of a

contrast measurement mark on said original plate stage and a contrast measurement mark on said substrate stage,

said mark detecting apparatus comprising means for uniforming pulse light emitted from a pulse light emitting apparatus by oscillating means, receiving the light by a storage-type position sensor and obtaining pulse light emitting frequency of said pulse light emitting apparatus from a cycle of said oscillating means and predetermined number of pulses of said pulse light to start storage by said storage-type position sensor and emit said pulse light from said pulse light emitting apparatus by the obtained pulse light emitting frequency,

wherein a mark on a substrate is irradiated with said pulse light which is uniformed by said oscillating means and output by said pulse light emitting apparatus, and reflected light from the mark is received by said storage-type position sensor to detect the mark.

28. The exposing apparatus according to claim 16, further comprising a display, a network interface and a computer for executing software for network, permitting data communication of the maintenance information of the exposing apparatus via a computer network.

29. The exposing apparatus according to claim 17, further comprising a display, a network interface and a

computer for executing software for network, permitting data communication of the maintenance information of the exposing apparatus via a computer network.

30. The exposing apparatus according to claim 16, wherein said software for network provides a user interface on said display which is connected to the external network outside the plant where said exposing apparatus is located and for having access to the database which stores the maintenance information provided by the vendor or user of said exposing apparatus, permitting obtaining information from the database via said external network.

31. The exposing apparatus according to claim 17, wherein said software for network provides a user interface on said display which is connected to the external network outside the plant where said exposing apparatus is located and for having access to the database which stores the maintenance information provided by the vendor or user of said exposing apparatus, permitting obtaining information from the database via said external network.

32. The light receiving apparatus according to claim 1, wherein the storage time when the light is received by said storage-type position sensor is obtained from the

cycle of said oscillating means and predetermined number of pulses of said pulse light to control the storage-type position sensor based on the storage time.

33. The mark detecting apparatus according to claim 12, wherein the storage time when the light is received by said storage-type position sensor is obtained from the cycle of said oscillating means and predetermined number of pulses of said pulse light to control the storage-type position sensor based on the storage time.

34. The exposing apparatus according to claim 16, wherein the storage time when the light is received by said storage-type position sensor is obtained from the cycle of said oscillating means and predetermined number of pulses of said pulse light to control the storage-type position sensor based on the storage time.

35. The exposing apparatus according to claim 17, wherein the storage time when the light is received by said storage-type position sensor is obtained from the cycle of said oscillating means and predetermined number of pulses of said pulse light to control the storage-type position sensor based on the storage time.

36. The light receiving apparatus according to claim 1, wherein the cycle (YS) of said oscillating means is

obtained from the number of rotation (R) of the oscillating means and the number of oscillation (Y) by Equation 1,

the number of oscillating revolution (YT) of said oscillating means is obtained from the cycle (YS) obtained by Equation 1, the number of pulses (P) of the oscillating means and maximum frequency (LM) of the pulse light emitted from said pulse light emitting apparatus by Equation 2,

laser frequency (LF) is obtained from the number of oscillating revolution (YT) obtained by Equation 2, the cycle (YS) of said oscillating means obtained by Equation 1 and the number of pulses (P) of the oscillating means by Equation 3, and

the storage time of said storage-type position sensor is obtained from the oscillation cycle (YS) obtained by Equation 1 and the number of oscillating revolution (YT) obtained by Equation 2 by Equation 4,

Equations 1 to 4 being formulated by the following relational expression.